

Srinivas Malladi Awarded CPRIT Individual Investigator Grant

Dr. Malladi and his research group have been awarded an CPRIT Individual Investigator Grant titled “Dissecting the Survival Mechanisms of Latent Brain-Tropic Cancer Cells for Therapeutic Interventions” to advance research on breast cancer brain metastasis.

Brain metastatic incidence in HER2+ breast cancer patients with advanced disease is lethal. More than 50% of patients with residual disease develop brain metastases and survival rates in these patients’ post-diagnosis and treatment is less than a year. Current standard of care - cytotoxic drugs, radiation, HER2 targeted therapies are ineffective, implicating emergence of altered signaling, epigenomic and metabolic dependencies in disseminated cancer cells with metastatic potential.

To effectively eliminate brain metastases, understanding how residual disseminated cancer cells in the brain survive, stay latent, and initiate metastasis is critical. Towards addressing this significant knowledge gap, Malladi lab isolated disseminated brain-tropic cells that stay latent, resist current standard of care and initiate brain metastasis. Further investigations demonstrate that latent metastasis initiating cells uptake fatty acids from lipid rich environment, oxidize them to meet their cellular energy needs and store excess free fatty acids as lipid droplets to maintain cellular lipid and redox balance. Leveraging these unique preclinical models and insights from unbiased transcriptomic and metabolic analyses, Malladi lab aims to uncover the precise mechanisms that aid survival of metastasis initiating cells. Malladi lab anticipates successful completion of this project will uncover targetable survival dependencies of latent metastasis initiating cells and facilitate development of therapeutic strategies targeting brain metastasis initiating cells.

Dr. Malladi is an Associate Professor in the Department of Pathology, and member of Cancer Biology Program and Harold C. Simmons Comprehensive Cancer Center at UT Southwestern Medical Center. To learn more about ongoing research in Malladi Lab, follow this link <https://labs.utsouthwestern.edu/malladi-lab>

